



Figure F1. Exploitation rates versus spawning biomass plots from the basecase analysis and the sensitivity excluding the sanitation survey index.

G. Harvest projections and decision tables

The population assessments were projected forward under the default PFMC and California NFMP harvest policies (i.e. F50% with 40:10 and 60:20 reduction, respectively). All scenarios assume that catch in 2005 and 2006 is equal to the catch in 2004. Results are presented in Table G1.

A decision table was created with two states of nature and three management options. Uncertainty in the analysis (the states of nature) is represented by including and excluding the sanitation districts trawl survey. Management action alternatives considered were: (1) harvesting using the 40:20 rule based on the assessment including the sanitation districts trawl survey; (2) harvesting using the 60:20 rule based on the assessment including the sanitation districts trawl survey; and (3) harvesting using catch in 2004. All scenarios assume that catch in 2005 and 2006 is equal to the catch in 2004. Results are presented in Table G2.

Table G1. Forward projections under the default PFMC and California NFMP harvest policies (i.e. F50% with 40:10 and 60:20 reduction, respectively). All scenarios assume that catch in 2005 and 2006 is equal to the catch in 2004. Exploitation rates are in terms of the oldest aged fish in the model (Age 25 plus group) and not summary biomass.

With Sanitation Survey

Year	40:10	Biomass Age 2+	Spawning Biomass	Depletion	Commercial catch (mt)	Commercial harvest rate	Sport Catch (mt)	Sport Harvest Rate
2005	NA	1866	816	0.80	5.2	0.005	78.9	0.121
2006	NA	1846	827	0.81	5.2	0.005	82.6	0.113
2007	1	1811	818	0.80	13.4	0.013	222.2	0.291
2008	1	1633	703	0.69	11.5	0.013	191.0	0.291
2009	1	1503	623	0.61	10.0	0.013	164.9	0.291
2010	1	1412	572	0.56	9.0	0.013	145.7	0.291
2011	1	1348	541	0.53	8.3	0.013	132.6	0.291
2012	1	1303	520	0.51	7.9	0.013	124.0	0.291
2013	1	1271	505	0.49	7.6	0.013	118.4	0.291
2014	1	1246	494	0.48	7.4	0.013	114.6	0.291
2015	1	1226	485	0.47	7.2	0.013	111.8	0.291
2016	1	1210	478	0.47	7.1	0.013	109.5	0.291
2017		1198	472	0.46				

Year	60:20	Biomass Age 2+	Spawning Biomass	Depletion	Commercial catch (mt)	Commercial harvest rate	Sport Catch (mt)	Sport Harvest Rate
2005	NA	1866	816	0.80	5.2	0.005	78.9	0.121
2006	NA	1846	827	0.81	5.2	0.005	82.6	0.113
2007	1.00	1811	818	0.80	13.4	0.013	222.2	0.291
2008	1.00	1633	703	0.69	11.5	0.013	191.0	0.291
2009	1.00	1503	623	0.61	10.0	0.013	164.9	0.291
2010	0.96	1412	572	0.56	8.7	0.013	140.4	0.280
2011	0.94	1354	544	0.53	7.8	0.012	125.2	0.272
2012	0.92	1315	528	0.52	7.3	0.012	116.4	0.267
2013	0.91	1289	517	0.51	7.1	0.012	111.1	0.264
2014	0.90	1269	510	0.50	6.9	0.012	107.6	0.261
2015	0.89	1254	504	0.49	6.7	0.012	105.0	0.259
2016	0.88	1243	499	0.49	6.6	0.012	103.0	0.257
2017		1234	495	0.48				

Without Sanitation Survey

Year	40:10	Biomass Age 2+	Spawning Biomass	Depletion	Commercial catch (mt)	Commercial harvest rate	Sport Catch (mt)	Sport Harvest Rate
2005	NA	1352	563	0.58	5.2	0.007	82.0	0.151
2006	NA	1343	566	0.58	5.2	0.007	82.8	0.152
2007	1	1335	566	0.58	8.8	0.013	141.7	0.261
2008	1	1268	526	0.54	8.1	0.013	128.4	0.261
2009	1	1223	499	0.51	7.5	0.013	118.8	0.261
2010	1	1192	481	0.49	7.2	0.013	112.4	0.261
2011	1	1170	470	0.48	7.0	0.013	108.1	0.261
2012	1	1154	462	0.47	6.8	0.013	105.5	0.261

2013	1	1142	456	0.47	6.7	0.013	103.7	0.261
2014	1	1132	451	0.46	6.7	0.013	102.3	0.261
2015	1	1123	447	0.46	6.6	0.013	101.3	0.261
2016	1	1117	443	0.45	6.5	0.013	100.4	0.261
2017		1111	441	0.45				

Year	60:20	Biomass Age 2+	Spawning Biomass	Depletion	Commercial catch (mt)	Commercial harvest rate	Sport Catch (mt)	Sport Harvest Rate
2005	NA	1352	563	0.58	5.2	0.007	82.0	0.151
2006	NA	1343	566	0.58	5.2	0.007	82.8	0.152
2007	0.98	1335	566	0.58	8.6	0.013	139.1	0.256
2008	0.94	1271	528	0.54	7.6	0.012	121.8	0.246
2009	0.92	1232	505	0.52	7.0	0.012	110.9	0.240
2010	0.90	1208	492	0.50	6.7	0.012	104.5	0.236
2011	0.89	1192	484	0.50	6.5	0.011	100.7	0.233
2012	0.89	1181	479	0.49	6.3	0.011	98.6	0.232
2013	0.88	1173	476	0.49	6.3	0.011	97.2	0.231
2014	0.88	1167	473	0.48	6.2	0.011	96.1	0.230
2015	0.88	1162	471	0.48	6.1	0.011	95.3	0.229
2016	0.87	1158	469	0.48	6.1	0.011	94.7	0.228
2017		1155	468	0.48				

Table G2. Decision table.

Management Action	Year	Recreational catch (thousands of fish)	Commercial catch (mt)	State of nature			
				With Sanitation		Without Sanitation	
				More likely (p = 0.74)	less likely (p = 0.26)	Spawning Biomass	Depletion
40-10	2005	140	5	816	0.80	563	0.58
	2006	140	5	827	0.81	566	0.58
	2007	361	13	818	0.80	566	0.58
	2008	308	11	703	0.69	478	0.49
	2009	267	10	623	0.61	425	0.43
	2010	240	9	572	0.56	397	0.41
	2011	222	8	541	0.53	385	0.39
	2012	211	8	520	0.51	380	0.39
	2013	203	8	505	0.49	379	0.39
	2014	198	7	494	0.48	378	0.39
	2015	194	7	485	0.47	378	0.39
	2016	191	7	478	0.47	379	0.39
	2017			472	0.46	380	0.39
60-20	2005	140	5	816	0.80	563	0.58
	2006	140	5	827	0.81	566	0.58
	2007	361	13	818	0.80	566	0.58
	2008	308	11	703	0.69	478	0.49
	2009	267	10	623	0.61	425	0.43
	2010	231	9	572	0.56	397	0.41
	2011	209	8	544	0.53	388	0.40
	2012	197	7	528	0.52	387	0.40
	2013	189	7	517	0.51	389	0.40
	2014	184	7	510	0.50	392	0.40
	2015	180	7	504	0.49	395	0.40
	2016	177	7	499	0.49	398	0.41
	2017			495	0.48	401	0.41
Current catch	2005	140	5	816	0.80	563	0.58
	2006	140	5	827	0.81	566	0.58
	2007	140	5	818	0.80	566	0.58
	2008	140	5	785	0.78	565	0.58
	2009	140	5	762	0.76	563	0.58
	2010	140	5	739	0.74	561	0.57
	2011	140	5	717	0.71	559	0.57
	2012	140	5	697	0.69	557	0.57
	2013	140	5	679	0.68	555	0.57
	2014	140	5	663	0.66	553	0.57
	2015	140	5	649	0.65	551	0.56
	2016	140	5	637	0.63	549	0.56
	2017			626	0.62	548	0.56